

ZHAO ET AL.
"Satellite Positioning Systems Receivers ..."
Atty. Docket No. CS20045RL

Appl. No. 09/993,108
Examiner F. Mull
Art Unit 3662

1. (Original) A method in a satellite positioning system receiver,
comprising:

determining an estimated location of the receiver at the receiver;

transmitting the estimated location to a network;

receiving from the network altitude information based upon the
estimated location of the receiver;

determining a new location of the receiver at the receiver based
upon the altitude information received from the network.

2. (Original) The method of Claim 1, determining the estimated
location of the receiver based upon a coarse altitude of the receiver.

3. (Previously Amended) The method of Claim 1, determining a
derived altitude based upon the estimated location of the receiver, the altitude
information from the network including a reference altitude, determining the
new location of the receiver if a difference between the derived and reference
altitudes is outside an altitude threshold.

4. (Original) The method of Claim 2, requesting and receiving the
coarse altitude from the network.

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5. (Original) The method of Claim 1, receiving at the receiver terrain slope estimates at the estimated location from the network, determining the new location at the receiver based upon the altitude information and terrain slope estimates received from the network.

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6. (Previously Amended) A method in a satellite positioning system receiver, comprising:

10 determining an estimated location of the receiver based on information received from a wireless communications network;

determining a reference altitude of the receiver based upon the estimated location of the receiver;

determining a new location of the receiver based upon the reference altitude.

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7. (Original) The method of Claim 6, determining the reference altitude of the receiver by using the estimated location to index the reference altitude in a map database.

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8. (Original) The method of Claim 6, determining the estimated location of the receiver based upon a coarse altitude of the receiver.

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9. (Currently Amended) The method of Claim 6 [7], determining a derived altitude from a 3-dimensional estimated location of the receiver,

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determining the new location of the receiver if a difference between the derived altitude and the reference altitude of the receiver is outside an altitude threshold.

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10. (Previously Amended) The method of Claim 6, determining the new location at the receiver based upon the reference altitude of the receiver and terrain slope information for the estimated location.

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11. (Previously Amended) The method of Claim 6, determining the reference altitude of the receiver based upon the estimated location of the receiver and based upon 3-dimensional location fix altitude information.

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Claim 12 (Previously Canceled).

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13. (Previously Amended) The method of Claim 6,
determining the estimated location with a coarse altitude,
determining the reference altitude and terrain slope information at
the estimated location,

updating the estimated location with the reference altitude and
the terrain slope information.

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14. (Previously Amended) The method of Claim 6,

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determining the estimated location with a coarse altitude,
determining the reference altitude with terrain slope information
in the vicinity of the estimated location.

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15. (Previously Amended) A satellite positioning system receiver
location method, comprising:

determining, at the receiver, an estimated location of the receiver;

transmitting the estimated location of the receiver to a network;

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determining a reference altitude of the receiver at the network
based upon the estimated location of the receiver;

determining a new location of the receiver based upon the
reference altitude of the receiver.

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16. (Original) The method of Claim 15, determining the reference
altitude of the receiver by using the estimated location to index the reference
altitude of the receiver in a map database on the network.

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17. (Original) The method of Claim 15, determining the estimated
location of the receiver based upon a coarse altitude of the receiver.

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18. (Previously Amended) The method of Claim 17, determining
the new location of the receiver only if a difference between the coarse and
reference altitudes is outside an altitude threshold.

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19. (Original) The method of Claim 18, determining the new location of the receiver at the network.

5 20. (Previously Amended) The method of Claim 15,
the estimated location is a 3-dimensional location fix, determining
a derived altitude from the estimated location,
transmitting satellite information used to determine the 3-
dimensional location fix of the receiver to the network,
10 determining a difference between the derived altitude and the
reference altitude, determining a corrected location of the receiver based upon
the satellite information and the difference.

15 21. (Previously Amended) The method of Claim 20, transmitting
weighting factors used to determine the estimated location of the receiver to
the network, determining a corrected location of the receiver based upon the
satellite information, the weighting factors, and the difference between the
derived altitude and the reference altitude at the network.

20 22. (Original) The method of Claim 6, the estimated location is a
previously generated 3-dimensional location of the receiver, computing a
derived altitude from the 3-dimensional location, determining the reference
25 altitude of the receiver from the derived altitude.

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23. (Original) A method in a satellite positioning system receiver,
comprising:

determining a change in estimated location of two previously
estimated locations,

5 at least one of the previously estimated locations based upon a
reference altitude;

revising the reference altitude using the change in estimated
location and terrain slope information,

determining a new location using the revised reference altitude.

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